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Tovah R. Trimming
Golden Gate University School of Law

DERAILING POWDER RIVER BASIN COAL EXPORTS: LEGAL MECHANISMS TO REGULATE FUGITIVE COAL DUST FROM RAIL TRANSPORTATION

*TOVAH R. TRIMMING**

I. AN INTRODUCTION TO COAL DUST

Coal trains are known as "black snakes."[1] The name aptly describes the miles of uncovered rail cars[2] bearing the black cargo as they slither along the tracks. During the journey from coal mines to their final destinations, coal trains shed plumes of coal dust from the tops of the train cars. As the dust spews from the rail cars, it fills the surrounding air

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[1] NAT'L WILDLIFE FED'N, THE TRUE COST OF COAL: THE COAL INDUSTRY'S THREAT TO FISH & COMMUNITIES IN THE PACIFIC NORTHWEST 4 (2012), *available at* www.nwf.org/~/media/PDFs/Global-Warming/Reports/NWF_PacificCoal_FINAL.ashx.

[2] Open-top cars are a railroad industry standard for shipping coal. Open-top rail cars are cheaper and more easily loaded than covered cars. *See, e.g.*, Nick Gier, *Coal Problem: Coal Trains Threaten Our Health and Our Environment*, IDAHO STATE J., Dec. 2, 2012, *available at* 2012 WLNR 25595680 (reporting that closed cars increase the risk of spontaneous combustion and shippers claim that ventilated tops are too expensive); *see also* Dustin Bleizeffer, *Eye on Energy: Coal Dust Could Increase Rail Costs*, STAR TRIBUNE, Jan. 31, 2010, *available at* trib.com/business/business/eye-on-energy-coal-dust-could-increase-rail-costs/article_24488f07-38d0-557e-92ba-4aac83e23d17.html (noting that covers are a huge capital expense); Duane Bennett & Anthony Sexton, *Automation Trends in Train Loading*, WORLD COAL, June 2012, *available at* www.kanawhascales.com/images/PDF/World_coal_June_2010_Article.pdf (describing advances in coal loading technology for open top train cars).

with harmful substances like mercury, lead, cadmium, arsenic, manganese, beryllium, and chromium.[3] When the dust settles, these substances are deposited in soil[4] and water,[5] harming plant, animal, and marine life.[6]

Environmental consequences from coal dust are also rooted in railroad safety concerns. Coal dust accumulation in the ballast can destabilize the tracks and contribute to derailments.[7] Derailments impact the environment because the overturned train can spill locomotive fuel and dump thousands of pounds of coal and coal dust, resulting in soil and water contamination.[8]

Coal exports have heightened concerns about fugitive coal dust. Despite the United States having the largest coal reserves in the world,[9] domestic consumption is falling.[10] This decline is a result of "low natural gas prices, more stringent regulatory requirements,[11] warmer weather, and low rates of economic growth."[12] Another factor is environmental groups' successful efforts to curb the nation's use of coal-fired energy.[13]

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[3] *See* Paul R. Epstein et al., *Full Cost Accounting for the Life Cycle of Coal*, 1219 ANNALS N.Y. ACAD. SCI. 73, 74-75 (2011), *available at* solar.gwu.edu/index_files/Resources_files/epstein_full%20cost%20of%20coal.pdf; *see also* ADEBOWALE ADENIJI, U.S. ENVTL. PROT. AGENCY, BIOREMEDIATION OF ARSENIC, CHROMIUM, LEAD, AND MERCURY 14, 20, 26, 34, (2004), *available at* nepis.epa.gov/EPA/html/DLwait.htm?url=/Exe/ZyPDF.cgi?Dockey=900Z0C00.PDF.

[4] *See, e.g.*, ERIC DE PLACE, NORTHWEST COAL EXPORTS: SOME COMMON QUESTIONS ABOUT ECONOMICS, HEALTH, AND POLLUTION 4 (2012*), available at* www.powerpastcoal.org/wp-content/uploads/2011/11/coal-FAQ-April12.pdf.

[5] *See, e.g.*, Letter from Columbia Riverkeeper et al. to Steve Gagnon, U.S. Army Corp[s] of Eng'rs 12-13 (May 3, 2012), *available at* columbiariverkeeper.org/wp-content/uploads/2011/09/2012-5-3-FINAL-Columbia-Riverkeeper-et-al-RHA-Comments-on-Morrow-Pacific.pdf.

[6] NAT'L WILDLIFE FED'N, *supra* note 1, at 10-11; *see also Key Facts: Trains*, COAL TRAIN FACTS, www.coaltrainfacts.org/key-facts (last visited Mar. 21, 2013).

[7] INFRASTRUCTURE SECURITY & ENERGY RESTORATION, OFFICE OF ELEC. DELIVERY & ENERGY RELIABILITY, U.S. DEP'T OF ENERGY, DELIVERIES OF COAL FROM THE POWDER RIVER BASIN: EVENTS & TRENDS 2005-2007 14 (2007), *available at* www.oe.netl.doe.gov/docs/Final-Coal-Study_101507.pdf.

[8] *See, e.g.*, Arthur Hirsch & Mary Gail Hare, *Questions of Safety Large*, BALT. SUN, Aug. 23, 2012, at 1A, *available at* 2012 WLNR 18065285.

[9] *Today in Energy: United States Leads World in Coal Reserves*, U.S. ENERGY INFO. ADMIN. (Sept. 2, 2012), www.eia.gov/todayinenergy/detail.cfm?id=2930.

[10] ENERGY POLICY RESEARCH FOUND., INC., ECONOMIC VALUE OF AMERICAN COAL EXPORTS 3 (Aug. 2012), *available at* www.eprinc.org/pdf/EPRINC-COALEXPORTS-2012.pdf.

[11] *See, e.g.*, *Overview: The CAA Amendments of 1990*, U.S. ENVTL. PROTECTION AGENCY, epa.gov/oar/caa/caaa_overview.html (last updated Dec. 19, 2008) (the Amendments "promote[] the use of clean low sulfur coal and natural gas, as well as innovative technologies to clean high sulfur coal through the acid rain program").

[12] ENERGY POLICY RESEARCH FOUND., INC., *supra* note 10, at 3.

[13] *See* Eric Lipton, *Even in Coal Country, the Fight for an Industry*, N.Y. TIMES, May 29, 2012, at A1, *available at* www.nytimes.com/2012/05/30/business/energy-environment/even-in-

In response to the decline, coal companies are looking to overseas markets to sell domestic coal.[14]

The railroads are vital to coal exports because they are the most heavily relied upon form of transportation in the coal industry.[15] In 2010, railroads hauled seventy percent of all coal deliveries, constituting over forty-five percent of total cargo.[16] Trains can transport coal efficiently because rail infrastructure covers a wide geographic area and can move large amounts of coal.[17] Railroads are important to coal export demand because transportation costs factor greatly in the delivered price.[18] For example, sixty percent of the delivered price of coal produced in the Powder River Basin (PRB) is attributable to transportation costs.[19]

The PRB region of northeast Wyoming and southeast Montana is an area of interest because it houses the largest percentage of low-sulfur coal in the United States,[20] which is in high demand throughout Asia.[21] China is of particular concern due to its rapidly growing economy [22] and its heavy reliance on coal-fired energy.[23] The world's largest private-sector coal company, Peabody Energy, recently told investors that United States coal export capacity could more than double in five years to

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kentucky-coal-industry-is-under-siege.html?pagewanted=all&_r=0 (noting that environmental groups have targeted coal plants for years as the lead source of air pollution and are aiming for the closure of about one third of coal plants by 2020); *see also Coal Victories Across the Nation*, SIERRA CLUB, www.sierraclub.org/environmentallaw/coal/victories.aspx (last visited Oct. 15, 2012) (providing links to stories about various abandoned or defeated proposals for coal-fired plants, enforcement of Clean Air Act violations, and related matters).

[14] *See, e.g.*, W. ORG. OF RESOURCE COUNCILS, EXPORTING POWDER RIVER BASIN COAL: RISKS AND COSTS 4 (2011), *available at* powerpastcoal.org/wp-content/uploads/2011/10/WORC-Exporting-PRB-Coal-Risks-and-CostsFINALFINAL9-111.pdf.

[15] Gary L. Hunt & Hans Daniels, *Coal: Inconvenient Truths*, 146 PUB. UTIL. FORTNIGHTLY, Feb. 1, 2008, at 10, *available at* www.fortnightly.com/fortnightly/2008/02/coal-inconvenient-truths?page=0%2C0.

[16] ASS'N OF AM. R.R., GREAT EXPECTATIONS 2011: FREIGHT RAIL'S ROLE IN U.S. ECONOMIC RECOVERY 8, 12 (2011), *available at* onerail.org/sites/onerail.org/files/documents/rail-study/aar-great-expectations-2011.pdf.

[17] Hunt & Daniels, *supra* note 15, at 10.

[18] *Id.*

[19] *Id.*

[20] COLUMBIA CTR. FOR CLIMATE CHANGE LAW, CARBON OFFSHORING: THE LEGAL AND REGULATORY FRAMEWORK FOR U.S. COAL EXPORTS 3 (2011), *available at* powerpastcoal.org/wp-content/uploads/2011/09/ColumbiaLawSchool_coalexportpolicy11.pdf. The PRB region is estimated to contain eighty billion short tons out of a U.S. estimated total of 100 billion tons. *Id.*

[21] *Id.*

[22] THOMAS M. POWER, SIGHTLINE, THE GREENHOUSE GAS IMPACT OF EXPORTING COAL FROM THE WEST COAST: AN ECONOMIC ANALYSIS 1 (2011), *available at* www.sightline.org/wp-content/uploads/downloads/2012/02/Coal-Power-White-Paper.pdf.

[23] Bryan Walsh, *The Scariest Environmental Fact in the World*, TIME SCI. & SPACE, Jan. 29, 2013, *available at* science.time.com/2013/01/29/the-scariest-environmental-fact-in-the-world/ (reporting that China burns almost as much coal as the rest of the world combined).

accommodate estimated increases.[24] Union Pacific (UP) and Burlington Northern Sante Fe (BNSF), the only railroad companies exporting coal from the PRB,[25] are both investing in capacity expansion.[26] On average, about five trains travel from the PRB to the West Coast every day, but increasing exports to the scale proposed by industry would require about forty trains every day.[27] More coal shipments will result in more fugitive coal dust.

Increased coal shipments for export from the PRB have not gone unnoticed by environmental groups and communities along the railways. Communities along the train routes are voicing concerns about the potential health impacts from coal dust exposure as more trains pass through local cities[28] like Spokane and Seattle, Washington; Billings, Montana; and Portland, Oregon.[29] PRB coal is extremely friable and easily degrades to smaller particles regardless of how it is transported or handled, thereby causing fugitive coal dust.[30] Furthermore, coal trains traveling from the PRB also pass through environmentally sensitive areas such as national parks, forests, historical areas, and parks.[31] The concerns surrounding coal trains are becoming more acute, as industry plans to expand railroad and export terminal infrastructure to accommodate even more coal exports.

Although coal dust contains toxic elements that are regularly spewed into ecosystems and communities along the railways, it is currently unregulated. Setting limits on the amount of allowable fugitive

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[24] News Release, Peabody Energy, Peabody Energy Announces Results for the Quarter Ended March 31, 2012 (Apr. 19, 2012), *available at* phx.corporate-ir.net/phoenix.zhtml?c=129849&p=irol-newsArticle_Print&ID=1684914&highlight.

[25] W. ORG. OF RESOURCE COUNCILS, *supra* note 14, at 7.

[26] Hunt & Daniels, *supra* note 15, at 10.

[27] W. ORG. OF RESOURCE COUNCILS, *supra* note 14, at 6-7.

[28] *See, e.g.*, Keila Szpaller, *Councilor Calls for Impact Study*, MISSOULIAN, May 16, 2012, at B1; Kari Lydersen, *Fueling the Tiger: The US Coal Industry Wants To Boost Exports to Asia—Native American Tribes Stand in the Way*, 27 EARTH ISLAND J., Jan. 1, 2013, at 36, *available at* www.earthisland.org/journal/index.php/eij/article/fueling_the_tiger/; Zach Hagadone, *The Dirty Dance: Export Plan Puts North Idaho in the Middle of a New Coal Rush*, BOISE WEEKLY, Feb. 1, 2012, at 13, *available at* 2012 WLNR 4585807.

[29] W. ORG. OF RESOURCE COUNCILS, HEAVY TRAFFIC AHEAD: RAIL IMPACTS OF POWDER RIVER BASIN COAL TO ASIA BY WAY OF PACIFIC NORTHWEST TERMINALS 50 (2012), *available at* www.greatfallstribune.com/assets/pdf/G1191896711.PDF.

[30] RODERICK J. HOSSFELD & ROD HATT, PRB COAL DEGRADATION: CAUSES AND CURES 1, *available at* www.researchgate.net/publication/228972594_PRB_COAL_DEGRADATIONCAUSES_AND_CURES.

[31] W. ORG. OF RESOURCE COUNCILS, *supra* note 29, at 50; *see BNSF's Rail Network Can Get You There—No Matter Where You're Shipping Your Freight*, BNSF RAILWAY, *available at* www.bnsf.com/customers/where-can-i-ship/ (last visited Mar. 24, 2013) (showing BNSF existing lines and route map for coal).

coal dust losses may mitigate adverse impacts from the losses themselves and also the derailments they can cause, which further aggravate the risks to the environment. This Comment will discuss the trends that have made exporting coal a viable option for the coal industry and how accommodating the industry's plans to expand exports will impact the environment. Next, the Comment will explain the history of the regulatory scheme governing the railroads and its preemptive nature. This Comment will then examine two ways to address the issue of fugitive coal dust: first, through the statutory and regulatory authority of the Federal Railroad Administration, and second, through the Clean Air Act. The Comment proposes that states regulate coal dust as particulate matter in their State Implementation Plans. Finally, the Comment explores private citizens' ability to sue railroad companies under the citizen suit provision.

II. BACKGROUND ON UNITED STATES' COAL EXPORTS

Coal is the world's dirtiest fossil fuel,[32] containing numerous toxic and carcinogenic substances.[33] Every stage of coal's life cycle—mining,[34] transport, processing and combustion—has adverse impacts on public health and the environment.[35] Even overseas consumption has a domestic impact.[36] Burning coal results in soot dispersion around the world, contributing to the causes of global climate change.[37] [38]

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[32] Coal releases more harmful substances than any other fossil fuel. When burned, coal releases carbon dioxide, sulfur dioxide, and nitrogen oxides at higher rates than natural gas or oil. The average emission rates in the United States from coal-fired generation are 2,249 pounds per megawatt hour ("lbs/MWh") of carbon dioxide, thirteen lbs/MWh of sulfur dioxide, and six lbs/MWh of nitrogen oxides. In contrast, natural gas-fired generation average emissions rates in the United States are half as much carbon dioxide, one percent as much sulfur oxides, and less than a third as much nitrogen oxides. Oil is almost as dirty as coal, but it still burns cleaner. Average emissions rates for oil-fired generation are one fourth less carbon dioxide, eight percent less sulfur dioxide, and one third fewer nitrogen oxides. *See generally Clean Energy*, U.S. ENVTL. PROTECTION AGENCY, www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html (last updated Oct. 17, 2012) (citing U.S. EPA, eGRID 2000) (reporting that natural gas-fired generation average emissions rates in the U.S. are 1135 lbs/MWh of carbon dioxide, 0.1 lbs/MWh of sulfur dioxide, and 1.7 lbs/MWh of nitrogen oxides, and that oil-fired generation average emission rates in the U.S. are 1672 lbs/MWh of carbon dioxide, 12 lbs/MWh of sulfur dioxide, and 4 lbs/MWh of nitrogen oxides).

[33] Epstein et al., *supra* note 3, at 74-75.

[34] Coal mining is detrimental to human health and the environment through air pollution, water pollution and depletion, and land use impacting farm land. W. ORG. OF RESOURCE COUNCILS, *supra* note 14, at 12.

[35] Epstein et al., *supra* note 3, at 74-75.

[36] *See, e.g.*, Keith Bradsher & David Barboza, *Pollution from Chinese Coal Casts a Global Shadow*, N.Y. TIMES, June 11, 2006, at A1.

[37] *Fossil Fuels*, ENVTL. & ENERGY STUDY INST., www.eesi.org/fossil_fuels (last visited Mar.

Despite these known consequences of coal mining and burning of coal fuel, coal dust regulations are non-existent. At this time (2013), there are no limits on the amount of coal dust that can be released into the air during transportation.[39] The lack of regulation is particularly important because industry plans to increase coal exports[40] from an already unprecedented spike in coal exports. In 2011, United States' coal exports were up thirty-one percent from 2010 and the highest since 1991.[41]

Currently, the only export terminal for PRB coal is in Canada.[42] While there are no terminals to enable coal exports from the West Coast of the United States,[43] large coal companies like Alcoa, Ambre Energy, Arch Coal, and Peabody Energy are proposing to open new terminals in Washington and Oregon.[44] To these companies, terminals in these states are ideal because transporting coal from the western coal fields through the northwest is the fastest and cheapest route.[45] However, if environmentalists and other coal opponents are able to successfully block the construction of these terminals, coal companies may also consider the Gulf Coast and the East Coast.[46]

Meeting projected demand overseas for United States coal exports will produce other environmental impacts than those resulting from coal dust. Expanding coal exports will require additional rail and terminal infrastructure, which pose their own environmental risks. Coal exports from the PRB are restricted because key segments of track between the PRB and West Coast ports are operating at or near capacity, a total of no more than five unit trains per day.[47] In order to create more capacity for

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21, 2013) (reporting that coal combustion is responsible for more than thirty-six percent of the greenhouse gas emissions in the United States).

[38] *See, e.g.*, Bradsher & Barboza, *supra* note 36, at A1.

[39] COLUMBIA CTR. FOR CLIMATE CHANGE LAW, *supra* note 20, at 10.

[40] NAT'L WILDLIFE FED'N, *supra* note 1, at 4.

[41] ENERGY POLICY RESEARCH FOUND., INC., *supra* note 10, at 5.

[42] W. ORG. OF RESOURCE COUNCILS, *supra* note 14, at 7.

[43] POWER, *supra* note 22, at 1.

[44] *See* Earthfix, *Coal Scorecard: Your Guide to Coal in the Northwest*, OPB, June 28, 2012, earthfix.opb.org/energy/article/coal-score-card/ (discussing five coal export terminal project proposals, two in Washington and three in Oregon).

[45] NAT'L WILDLIFE FED'N, *supra* note 1, at 2.

[46] Larry S. Soward, *As Pacific Northwest Fights Coal Export Terminals, Gulf Coast Should Not Be a Spectator*, AIR ALLIANCE HOUS., June 8, 2012, airalliancehouston.org/commentary/detail/as_pacific_northwest_fights_coal_export_terminals_gulf_coast_should_not_be_ (noting that currently six ports on the Gulf Coast and East Coast account for the vast majority of the coal exports, at ninety-four percent in 2010).

[47] W. ORG. OF RESOURCE COUNCILS, *supra* note 14, at 6-7, 9. Capacity is measured by the number of trains a segment of track can handle in a one day period. *Id* at 8.

coal exports, rail infrastructure needs to be expanded or upgraded.[48] Rail expansion projects can cause sink holes, increased noise and vibration, groundwater contamination in the event of a rail line accident, and higher concentrations of hazardous air pollutants.[49] Additionally, due to the heavy weight of coal, more exports will elevate diesel emissions, as each 125 to 150 car train requires four to five locomotives.[50]

Existing export terminals also have limited capacity.[51] However, coal producers are expected to undertake the necessary expansions to accommodate new export volumes.[52] The Environmental Protection Agency (EPA) has raised concerns about the construction of new export terminals because of their impacts on species, critical habitats, and aquatic resources.[53] The EPA is also concerned about these projects' potential contribution to climate change and the drift of particulates, mercury, and ozone from Asian countries to the United States.[54]

A. THE SHIFT WESTWARD TO THE POWDER RIVER BASIN

In 1971, under the authority of the Clean Air Act (CAA), the EPA promulgated the first sulfur dioxide emission standards for coal power plants.[55] In 1990, amendments to the Clean Air Act set even greater restrictions for sulfur emissions.[56] Because sulfur dioxide is a byproduct of coal combustion, one consequence of the stricter standards was a shift from high-sulfur coal located in the eastern United States, to low-sulfur coal located in the western United States.[57]

In addition to low sulfur content, sub-bituminous coal is in high

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[48] *Key Facts: Trains*, *supra* note 6.

[49] *See* Mid States Coal. for Progress v. Surface Transp. Bd., 345 F.3d 520, 550 (8th Cir. 2003) (discussing the adequacy of the Surface Transportation Board's Environmental Impact Statement as it pertained to environmental impacts of "'the largest and most challenging rail construction proposal ever to come before [it]'").

[50] *Key Facts: Trains*, *supra* note 6.

[51] Soward, *supra* note 46.

[52] *Id.*

[53] Letter from Kate Kelly, Dir. of the Office of Ecosystems, Tribal & Pub. Affairs, U.S. Envtl. Prot. Agency, to Steve Gagnon, Projects Manager, U.S. Army Corps of Eng'rs, Comments on Public Notice for Permit Application under Section 10 of the Rivers and Harbor Act for a Coal Transloading Facility, Port of Morrow, Or. (Apr. 5, 2012), *available at* media.oregonlive.com/environment_impact/other/EPA%20letter%20about%20PEIS.PDF.

[54] *Id.*

[55] Eugene M. Trisko, *Universal Scrubbing: Cleaning the Air*, 84 W. VA. L. REV. 983, 985 (1982).

[56] *See* 42 U.S.C.A. § 7651(b) (Westlaw 2013) (stating the goal to reduce annual emissions of sulfur dioxide of ten million tons from 1980 emission levels).

[57] Ari Peskoe, *A Challenge for Federalism; Achieving National Goals in the Electricity Industry*, 18 MO. ENVTL. L. & POL'Y REV. 209, 266-67 (2011).

demand due to its abundant supply and low cost.[58] Sub-bituminous coal constitutes about forty-four percent of the coal mined in the United States.[59] Large quantities are found in thick beds near the surface, which are less expensive to mine and therefore produce cheaper coal.[60] Coal production in the western United States has increased ten-fold since the mid-1970s, and western resources have grown to more than half of all U.S. production, from just over sixty million short tons (MMst) in 1973 to 549 MMst in 2003.[61]

To satisfy both domestic and international coal demand, the PRB has been particularly important because it contains nearly half the nation's coal supply, and it supplies the vast majority of relatively cheap[62] low-sulfur coal.[63] While the majority of the coal extracted from the PRB is shipped east for domestic use at coal-fired power plants,[64] it is also important to coal exports because Asian markets have high energy demands coupled with increasing clean-air concerns.[65] However, the characteristics of PRB coal also makes it prone to causing coal dust.[66]

B. RAILROAD REGULATION

Regulation of the railroad industry changed dramatically in the twentieth century from a highly regulated industry to a largely unregulated industry. In 1887, Congress created the Interstate Commerce Commission (ICC) to prevent railroad companies from abusing their vast power over the shippers and communities they served.[67] By the 1970s the railroad industry was near collapse as a result of the trucking, pipeline, and barge industries.[68] To revive the industry, Congress began implementing sweeping deregulations.

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[58] COLUMBIA CTR. FOR CLIMATE CHANGE LAW, *supra* note 20, at 2.

[59] *Id*.

[60] *Today in Energy: Subbituminous and Bituminous Coal Dominate U.S. Coal Production*, U.S. ENERGY INFO. ADMIN., (Aug. 16, 2011), www.eia.gov/todayinenergy/detail.cfm?id=2670 [hereinafter *Coal Dominates U.S. Coal Production*].

[61] RICHARD BONSKOWSKI ET AL., U.S. ENERGY INFO. ADMIN., COAL PRODUCTION IN THE U.S.—AN HISTORICAL OVERVIEW 2 (2006), *available at* www.eia.gov/FTPROOT/coal/coal_production_review.pdf.

[62] *See* Jeff Nesbit, *Coal Export Plan Goes Right Through Heart of Pacific Northwest*, U.S. NEWS & WORLD REP., Sept. 4, 2012, www.usnews.com/news/blogs/at-the-edge/2012/09/04/coal-export-plan-goes-right-through-heart-of-pacific-northwest.

[63] *See Today in Energy*, *supra* note 60.

[64] *See Groups Decry Salazar's Dirty Energy Giveaway*, WILD EARTH GUARDIANS (Mar. 22, 2011), www.wildearthguardians.org/site/News2?page=NewsArticle&id=6678&news_iv_ctrl=1194.

[65] *See* COLUMBIA CTR. FOR CLIMATE CHANGE LAW, *supra* note 20, at 3.

[66] HOSSFELD & HATT, *supra* note 30, at 1.

[67] H.R. REP. NO. 104-311, at 90 (1995), *reprinted in* 1995 U.S.C.C.A.N. 793, 802.

[68] *Id*.

In 1995, Congress passed the Interstate Commerce Commission Termination Act (ICCTA).[69] The ICCTA was designed to "eliminat[e] obsolete rail provisions" and "keep[] bureaucracy and regulatory costs at the lowest possible level, consistent with affording remedies only where they are necessary and appropriate."[70] To uphold this goal, Congress intended the ICCTA to entirely preempt state economic regulation of railroads.[71] Congress implemented its goals and intent by replacing the ICC with the Surface Transportation Board (STB)[72] and granting the STB "exclusive" jurisdiction over a wide range of railroad matters.[73] The broad language of the ICCTA grants the STB exclusive jurisdiction over transportation by rail carriers and remedies with respect to rules, practices, routes, services, and facilities of such carriers.[74] Additionally, the STB has exclusive jurisdiction over the construction, acquisition, operation, abandonment, and discontinuation of railroad operations or facilities.[75] The STB also has exclusive licensing authority for the construction and operation of rail lines.[76]

The "exclusive" language of the ICCTA has resulted in federal courts declaring that many state and local regulations affecting railroad operations are preempted.[77] However, because the CAA mandates state action through the SIP processes, courts will attempt to harmonize the ICCTA and these state regulations rather than invoke preemption.[78] Railroads are also subject to federal safety regulations promulgated by the Federal Railroad Administration.

III. THE FEDERAL RAILROAD ADMINISTRATION AND SAFETY REGULATION

The Department of Transportation regulates the railroads through two agencies: the STB, described above, and the Federal Railroad Administration (FRA). The Federal Rail Safety Act (FRSA)[79] authorizes

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[69] I.C.C. Termination Act of 1995, Pub. L. No. 104-88, 109 Stat. 803 (1995).

[70] *See* H.R. REP. NO. 104-311, at 93.

[71] *Id.* at 95-96.

[72] *See* 49 U.S.C.A. §§ 701, 702 (Westlaw 2013).

[73] 49 U.S.C.A. § 10501(b)(2) (Westlaw 2013).

[74] *Id.* § 10501(b)(1).

[75] *Id.* § 10501(b)(2).

[76] 49 U.S.C.A. § 10901 (Westlaw 2013).

[77] COLUMBIA CTR. FOR CLIMATE CHANGE LAW, *supra* note 20, at 6.

[78] *Id* at 10.

[79] The FRSA, unlike the ICCTA, explicitly permits some state and local rail safety regulations in areas not covered by the FRA. 49 U.S.C.A. § 20106(a)(2) (Westlaw 2013). This allows states to avoid ICCTA preemption and retain power to pass some safety rules. *See, e.g.*, Union Pac. R.R. v. Cal. Pub. Util. Comm'n, 346 F.3d 851 (9th Cir. 2003) (examining FRSA

the FRA to regulate "every area of railroad safety."[80] The authority extends to everything from hazardous materials to employee training.[81]

A. COAL DUST POSES A RISK TO RAIL SAFETY AND CONSEQUENTLY THREATENS HUMAN SAFETY AND THE ENVIRONMENT

The FRA's broad authority over railroad safety allows it to regulate fugitive coal dust since coal dust can compromise track stability and contribute to derailments. [82] Derailments can adversely impact soil and water by spilling locomotive fuel, coal, and coal dust.[83] The FRA reported 389 train derailments between January and April of 2012 and almost 1500 derailments in 2011.[84] By June in 2012, six major coal train derailments had already occurred, dumping carloads of coal and causing fatalities.[85] The National Transportation Safety Board, an independent federal agency charged with investigating significant accidents such as train derailments,[86] typically considers coal dust on tracks as a potential contributor to derailments.[87] Because there are no mandated and enforceable limits on the amount of allowable coal dust losses, a safety rule which minimized or eliminated allowable losses would guard against coal dust buildup that contributes to derailments. This safeguard would in turn further protect the environment and public safety from the aftermath of derailments.

In May of 2005, two train derailments occurred on the main lines heading out of the PRB.[88] Coal dust accumulation was among the factors contributing to the derailments.[89] The derailments prompted the

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preemption without triggering ICCTA preemption). This Comment will not discuss the nuances of preemption between the FRSA and ICCTA in terms of a state or local safety regulation of coal dust. However, this may be another way to address coal dust problems.

[80] 49 U.S.C.A. § 20103(a) (Westlaw 2013).

[81] *See Railroad Safety*, FED. R.R. ADMIN., www.fra.dot.gov/Page/P0010 (last visited Oct. 8, 2012).

[82] *Coal Dust Frequently Asked Questions*, BNSF RAILWAY, www.bnsf.com/customers/what-can-i-ship/coal/coal-dust.html (last visited Oct. 29, 2012).

[83] *See, e.g.*, Hirsch & Hare, *supra* note 8, at 1A.

[84] Manuel Quinones, *Coal: Derailments Add Fuel to Export Battle*, GREENWIRE, July 11, 2012, www.eenews.net/public/Greenwire/2012/07/11/2.

[85] Eric de Place, *Coal Goes off the Rails*, SIGHTLINE DAILY, July 19, 2012, daily.sightline.org/2012/07/19/coal-goes-off-the-rails/.

[86] *About the National Transportation Safety Board*, NAT'L TRANSP. SAFETY BD., www.ntsb.gov/about/index.html (last visited Mar. 19, 2013).

[87] Quinones, *supra* note 84.

[88] Josh Voorhees, *Railroads, Utilities Clash over Dust from Coal Trains*, E & E PUBL'G, Jan. 25, 2010, www.eenews.net/public/Greenwire/2010/01/25/2.

[89] *See* INFRASTRUCTURE SECURITY & ENERGY RESTORATION, *supra* note 7, at 14.

Burlington Northern Sante Fe railroad (BNSF) and federal agencies to investigate the effect of coal dust on railroad tracks from the PRB. BNSF found that "coal dust poses a serious threat to the stability of the track structure and thus to the operational integrity of [the] lines."[90] Additionally, based on the FRA's research, the STB has confirmed that coal dust poses a serious problem for railroad safety and operations.[91] The STB acknowledged that "coal dust is a particularly harmful contaminant of ballast . . . [and] interferes with track stability to a much greater extent than other contaminants present in the PRB . . . [e]ven if the amount of coal dust varies throughout the PRB."[92]

Increased coal exports would exacerbate the safety risks posed by coal dust, because more shipments mean more coal dust losses and buildup in the ballast. Most coal cars are uncovered. Transporting coal in uncovered cars is standard industry practice in order to cut costs.[93] Open-topped rail cars are cheaper and more easily loaded than covered cars.[94] Covered cars are also a safety hazard because they increase the risk of the coal spontaneously combusting.[95] In the PRB, the consequence of using uncovered cars is the loss of approximately 500 pounds of coal dust from each car.[96] Based on the average length of coal trains leaving the PRB, 115-140 cars,[97] this means roughly 57,500 to 70,000 pounds of coal dust are released into the environment during each trip. Currently, about ten coal trains travel from the PRB to the West Coast every day, but increasing exports to the scale proposed by industry would require at least a 500 percent increase in train traffic, to sixty trains a day.[98] This would also mean an increase in coal dust losses and heightened safety risk.

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[90] *Coal Dust Frequently Asked Questions*, BNSF RAILWAY, www.bnsf.com/customers/what-can-i-ship/coal/coal-dust.html (last visited Oct. 29, 2012).

[91] *See* Ark. Elec. Coop. Corp., No. FD 35305 (Surface Transp. Bd. Mar. 2, 2011), www.stb.dot.gov/decisions/readingroom.nsf/WebDecisionID/40436?OpenDocument, 2011 WL 742698, at *5.

[92] *Id*.

[93] Letter from Columbia Riverkeeper et al., *supra* note 5, at 14; *See* Scott Learn, *Coal Clash: Dust Up over How Much Blows Off on Trains Through Oregon, Washington*, OREGONIAN, June 30, 2012, www.oregonlive.com/environment/index.ssf/2012/06/coal_clash_dust_up_over_how_mu.html.

[94] *See, e.g.*, Gier *supra* note 2; Bleizeffer, *supra* note 2; Bennett & Sexton, *supra* note 2.

[95] *See, e.g*., Gier, *supra* note 2, at 3.

[96] *Key Facts: Trains*, *supra* note 6.

[97] *Energy: Coal*, WYO. STATE GEOLOGICAL SURV., www.wsgs.uwyo.edu/Research/Energy/Coal.aspx (last visited Apr. 8, 2013).

[98] W. ORG. OF RESOURCE COUNCILS, *supra* note 14, at 8, 15.

B. CONFLICT BETWEEN SHIPPERS AND OWNERS CAN STALL ATTEMPTS TO MITIGATE COAL DUST LOSSES

Despite acknowledgements from private industry and multiple government agencies that coal dust contributes to train derailments, no enforceable safety regulations or mitigation measures are in place to prevent coal dust losses, largely due to conflicts about who will bear the financial burden of mitigation measures. [99] The struggle is between the shippers, who own or lease the vast majority of the uncovered coal cars,[100] and BNSF, which owns and operates the line from the PRB.[101] The shippers take the position that BNSF, which is responsible for track maintenance under its contracts with the shippers, should be responsible for cleaning the coal dust.[102] Shippers argue that if the railway could charge shippers for track maintenance and measures to limit coal dust emissions, it would be "double dipping."[103]

Controversy between the shippers and BNSF regarding coal dust mitigation has been an ongoing battle for years. In 2009, BNSF issued a tariff requiring shippers to take all necessary steps to keep coal dust emissions below a standard set by the railroad.[104] In response, Arkansas Electric Cooperative Corporation (AECC) filed a petition in 2009 with the STB to declare the tariff an unreasonable rule or practice.[105] The STB held that the tariff could not be enforced as written, but it did authorize railroads to impose reasonable requirements upon coal shippers to mitigate coal dust emissions. [106] Shortly after this decision, BNSF revised the tariff, which became effective as of October 2011.[107] The current

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[99] *See* Voorhees, *supra* note 88.

[100] *Id.*

[101] Although the track is jointly owned by BNSF and Union Pacific, BNSF solely operates and maintains the line. Ark. Elec. Coop. Corp., No. FD 35305 (Surface Transp. Bd. Mar. 2, 2011), www.stb.dot.gov/decisions/readingroom.nsf/WebDecisionID/40436?OpenDocument, 2011 WL 742698, at *1.

[102] Voorhees, *supra* note 88.

[103] *Id.*

[104] Ark. Elec. Coop. Corp., No. FD 35305 (Surface Transp. Bd., Oct. 28, 2009), 2009 WL 3474880, at *1.

[105] *Id.*

[106] Ark. Elec. Coop. Corp., No. FD 35305 (Surface Transp. Bd. Mar. 2, 2011), www.stb.dot.gov/decisions/readingroom.nsf/WebDecisionID/40436?OpenDocument, 2011 WL 742698, at *8.

[107] Memorandum from BNSF to BNSF Coal Customers on Coal Dust Mitigation Requirements (July 14, 2011), *available at* domino.bnsf.com/website/updates.nsf/updates-marketing-coal/711FF24E19133BFD862578CD0057F83B?Open.

tariff requires shippers to reduce coal dust emission by at least eighty-five percent through a variety of suppression methods requiring approval by BNSF.[108] However, a report released after the tariff became effective reported that shippers are not complying.[109]

The saga continues as shippers and owners bring their grievances to the STB with a series of filings called the "Reasonableness of BNSF Railway Company Coal Dust Mitigation Tariff Provisions."[110] A recent filing from October 1, 2012, by Western Coal Traffic League, cited the lack of any enforcement provision in the tariff.[111] To avoid further conflict between shippers and owners, and further delays in the implementation of effective mitigation techniques, the FRA should address the issue through its rulemaking authority.

C. THE FRA SHOULD PROMULGATE A SAFETY RULE TO REQUIRE COAL DUST MITIGATION MEASURES

The FRA should promulgate a safety rule regarding coal dust mitigation based on its statutory authority and regulatory history. A mandatory, enforceable mitigation rule would protect the environment from coal dust losses during transit and coal and fuel spills from derailments.[112] The FRA is given broad authority under the Federal Rail Safety Act (FRSA) to issue rules and orders for "every area of railroad safety."[113] Specific responsibilities under this broad authority include investigating, reporting, and developing safety strategies to combat the causes of derailments.[114]

One way the FRA combats derailments is through adoption of comprehensive regulations prescribing minimum track safety standards.[115] Most germane to the effects of coal dust are FRA regulations governing ballast. The ballast provides drainage and

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[108] *Id.*

[109] Sayeh Tavangar, *Some Shippers Not Complying with BNSF Coal Dust Tariff*, WUSA9 News, Nov. 3, 2011, www.wusa9.com/news/local/story.aspx?storyid=173329.

[110] *See* David Gambrel, *Coal Dust Control: Arkansas Electric Petition for Declaratory Order*, COAL AGE (Jan. 6, 2012), www.coalage.com/index.php/departments/transportation-tips/1594-coal-dust-control-arkansas-electric-petition-for-declaratory-order.html.

[111] Opening Evidence and Argument of W. Coal Traffic League, Financial Docket 35557, at 33-36 (Surface Transp. Bd., Oct. 1, 2012), *available at* www.stb.dot.gov/filings/all.nsf/6084f194b67ca1c4852567d9005751dc/dbf283ade01f06db85257a8b004d420f/$FILE/233093.PDF (addressing reasonableness of BNSF Railway Company coal dust mitigation tariff provisions).

[112] *See* Hirsch & Hare, *supra* note 8, at 1A.

[113] 49 U.S.C.A. § 20103(a) (Westlaw 2013).

[114] 49 C.F.R. § 1.88(c),(d) (Westlaw 2013).

[115] 49 C.F.R. § 213.1 et seq. (Westlaw 2013).

structural support for the heavy loading applied by trains.[116] Coal dust is a fouling agent, meaning that it can destabilize railroad track by filling in voids in the unbound aggregate layer of the ballast.[117] Since the FRA already requires that all tracks be sufficiently supported and stabilized by adequate ballast material,[118] a safety regulation to limit the amount of coal dust losses would complement and expand upon existing safety regulations.

In addition to regulations for ballast safety, the FRA has already created regulations for coal dust. These regulations require the FRA to remove from service and repair plain bearing journal boxes containing coal dust "that can reasonably be expected to damage the bearing; or have a detrimental effect on the lubrication of the journal and bearing."[119] The operation of a train car with a damaged plain bearing box from coal dust is also prohibited.[120] These rules demonstrate the FRA's awareness of safety issues caused by coal dust and the FRA's authority to regulate it.

The FRA can develop a more effective and environmentally sound safety rule than the current BNSF coal dust mitigation rule. The BNSF requires a shipper to load coal cars in a specific way to eliminate the sharp angles and irregular surfaces that can promote the loss of coal dust during transit and to use dust suppression topper agents[121] to reduce coal dust losses by at least eighty-five percent.[122] However, this requirement still allows up to fifteen percent of coal dust to be lost. Moreover, dust suppression topper agents may have adverse environmental and health impacts, including soil contamination and air pollution.[123] In order to

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[116] Erol Tutumluer et al., Laboratory Characterization of Coal Dust Fouling Ballast Behavior 3 (Sept. 21-24, 2008) (unpublished draft manuscript submitted for the AREMA 2008 Annual Conference & Exposition), *available at* www.arema.org/files/library/2008_Conference_Proceedings/Laboratory_Characterization_of_Coal_Dust_Fouled_Ballast_Behavior_2008.pdf.

[117] *Id.* at 2.

[118] *See* 49 C.F.R. § 213.103 (Westlaw 2013); *see also* 49 C.F.R. § 213.334 (Westlaw 2013).

[119] 49 C.F.R. § 230.102(c) (Westlaw 2013).

[120] 49 C.F.R. § 215.107(c) (Westlaw 2013).

[121] U.S. ENVTL. PROT. AGENCY, POTENTIAL ENVIRONMENTAL IMPACTS OF DUST SUPPRESSANTS: "AVOID ANOTHER TIMES BEACH," AN EXPERT PANEL SUMMARY, at v (Thomas Piechota et al. eds., 2002), *available at* www.epa.gov/esd/cmb/pdf/dust.pdf (explaining that topper agents are chemical sprays applied to dust causing substances, such as coal, to reduce the amount of fugitive dust).

[122] *Coal Dust Frequently Asked Questions*, BNSF RAILWAY, www.bnsf.com/customers/what-can-i-ship/coal/coal-dust.html (last visited Oct. 29, 2012) (stating that shippers may request approval to use any other suppression methods that reduce dust by eighty-five percent).

[123] U.S. ENVTL. PROT. AGENCY, *supra* note 121, at 13 ("Potential environmental impacts include: surface and groundwater quality deterioration; soil contamination; toxicity to soil and water biota; toxicity to humans during and after application; air pollution; accumulation in soils; changes

reduce coal dust emissions without the use, or with smaller amounts, of topper agents, the FRA should promulgate a rule to require that cars be filled with less coal[124] or to reduce speed limits.[125] Coal dust can also be regulated under the Clean Air Act.

IV. STATES' AUTHORITY TO REGULATE COAL DUST UNDER THE CLEAN AIR ACT'S STATE IMPLEMENTATION PLANS

Although there are no federal limits on coal dust blowing off mobile sources, states have the authority to regulate coal dust as part of their State Implementation Plans (SIP) under the CAA.[126] Achieving and maintaining federally established National Ambient Air Quality Standards (NAAQS) is primarily the responsibility of the states.[127] Each State develops and submits to the EPA for approval a SIP that outlines how the State will achieve, maintain, and enforce each one of the NAAQS.[128]

In order to receive EPA approval the SIP must be quantifiable, enforceable, replicable, and accountable.[129] Each State has "the maximum administrative discretion possible" when implementing a SIP[130] "so long as the SIP includes certain requirements for permits, enforcement, emissions monitoring, and the like."[131] A State can impose stricter standards than the federal NAAQS[132] and expand regulations to non-criteria pollutants[133] (defined as pollutants other than those with federally established NAAQS). Once the EPA approves a SIP it is

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in hydrologic characteristics of the soils; and impacts on native flora and fauna populations.").

[124] *See* Bleizeffer, *supra* note 2.

[125] *See* CONNELL HATCH, FINAL REPORT: ENVIRONMENTAL EVALUATION OF FUGITIVE COAL DUST EMISSIONS FROM COAL TRAINS, GOONYELLA, BLACKWATER & MOURA COAL RAIL SYSTEMS, QUEENSLAND RAIL LIMITED 5 (2008), *available at* www.aurizon.com.au/InfrastructureProjects/Rail%20Network/Coal_Loss_Management_Project_Environmental_Evaluation.pdf. The amount of coal dust lost depends on many factors, including coal properties, train and wind speed, trains passing another train, train frequency, train vibration, profile of coal load, transport distance, and precipitation. *Id.*

[126] COLUMBIA CTR. FOR CLIMATE CHANGE LAW, *supra* note 20, at 10.

[127] SECTION OF ENV'T, ENERGY, & RES., AM. BAR ASS'N, THE CLEAN AIR ACT HANDBOOK 43 (Julie R. Domike & Alec C. Zacaroli eds., 2011).

[128] *Id*.

[129] *Id*. at 48-49.

[130] Exec. Order No. 13,132, 64 Fed. Reg. 43,255, 43,256 (Aug. 4, 1999).

[131] Sierra Club v. Korleski, 681 F.3d 342, 343 (6th Cir. 2012) (citing 42 U.S.C. § 7410(a)(2)).

[132] Wash. Envtl. Council v. Sturdevant, 834 F. Supp. 2d 1209, 1216 (W.D. Wash. 2011).

[133] A State could also regulate coal dust as a non-criteria pollutant. *See id.* However, the State would still face challenges regarding the debatable impacts of coal dust and ICCTA preemption challenges. Due to the overlapping considerations, whether non-criteria pollutant or PM, and in light of the additional step of amending a SIP to include a non-criteria pollutant, this Comment discusses regulating coal dust only as PM.

incorporated into federal law.[134] Coal dust could be regulated as particulate matter. Additionally, coal dust problems can be litigated by private citizens[135] under a narrative standard provision of a SIP.

A. REGULATING COAL DUST AS PARTICULATE MATTER

States have the authority to regulate coal dust as "particulate matter" (PM).[136] PM encompasses a broad range of liquid droplets or solid particles made up of chemically and physically diverse substances,[137] including acids, organic chemicals, metals, and soil or dust particles.[138] Because PM can harm humans and the environment, the EPA established NAAQS[139] for PM.[140] The EPA regulates PM that is smaller than ten micrometers, because these particles can be inhaled into the lungs, damaging the heart and lungs and causing serious health effects.[141] PM is also harmful to the environment because it can be carried long distances by wind and affect the acidity of water bodies, depleting nutrients and damaging forests, farm crops, and ecosystem diversity.[142] Coal dust qualifies as PM because its size ranges from over 100 micrometers to less than two micrometers.[143]

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[134] City of Ashtabula v. Norfolk S. Corp., 633 F. Supp. 2d 519, 527 n.2 (N.D. Ohio 2009); *see* Safe Air for Everyone v. U.S. Envtl. Prot. Agency, 488 F.3d 1088, 1091 (9th Cir. 2007) (holding that EPA approval of a SIP gives it the "force and effect of federal law").

[135] 42 U.S.C.A. § 7604(a)(1) (Westlaw 2013).

[136] COLUMBIA CTR. FOR CLIMATE CHANGE LAW, *supra* note 20, at 10.

[137] U.S. ENVTL. PROT. AGENCY, INTEGRATED SCIENCE ASSESSMENT FOR PARTICULATE 1-4 (Dec. 2009), *available at* www.epa.gov/ncea/pdfs/partmatt/Dec2009/PM_ISA_full.pdf.

[138] U.S. ENVTL. PROT. AGENCY, PARTICULATE MATTER (last updated June 28, 2012), www.epa.gov/pm/index.html. The EPA regulates PM in two categories based on size because particle size directly correlates to potential health problems. "Inhalable coarse particle," known as PM 10, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. "Fine particles," known as PM 2.5, are 2.5 micrometers in diameter and smaller. *Id.*

[139] The CAA authorizes the Administrator of the Environmental Protection Agency to identify and list air pollutants, from numerous mobile or stationary sources, that may reasonably be anticipated to "cause or contribute to air pollution [and] . . . endanger public health or welfare." 42 U.S.C.A. § 7408(a)(1)(A-B) (Westlaw 2013). The Administrator then proposes and promulgates primary and secondary National Ambient Air Quality Standards for the listed pollutants. 42 U.S.C.A. § 7409(a) (Westlaw 2013). After the NAAQS are set, each State is required to "adopt and submit . . . a plan which provides for implementation, maintenance, and enforcement of such . . . standard[s]." 42 U.S.C.A. § 7410(a)(1) (Westlaw 2013).

[140] U.S. ENVTL. PROT. AGENCY, *supra* note 137, at 1-4; *see also* 36 Fed. Reg. 8186 (Apr. 30, 1971).

[141] *Particulate Matter*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/air/particlepollution/health.html (last updated Mar. 18, 2013).

[142] *Id.*

[143] Christopher F. Blazek, Vice Pres. Mktg., Benetech Inc., Presentation at the American Coal Council (June 25-26, 2003), *available at* www.powerpastcoal.org/wp-content/uploads/2011/08/The-Role-of-Chemicals-in-Controlling-Coal-Dust-Emissions.pdf.

While not all fugitive coal dust particles are less than ten micrometers,[144] this does not bar a State from regulating it. For example, one study recommended assuming that half of the total coal dust losses consist of PM 10, and one fifth of the losses are PM 2.5.[145] Therefore, although not all the losses are regulated PM, a significant portion of the losses are. As discussed above, the EPA has set NAAQS for PM, and the states can set even stricter standards in their SIPs. Moreover, the EPA recommends preventive measures to control fugitive dust, rather than mitigative controls.[146] The EPA also notes that some individual sources may contribute insignificant amounts of dust, but as a source category on the whole, the contributions may be significant.[147]

There are also gaps in the scientific literature regarding the health effects of coal dust from rail transportation.[148] While some environmental groups are claiming coal is harmful to human health, proponents of the railroad industry criticize these claims because many of the concerns involve health impacts due to heavy and long-term occupational exposure to coal dust.[149] The conflict could be resolved by conducting a new and detailed study specific to PRB coal and region, but a recently proposed study to examine the impacts of coal dust losses through cities to international ports failed in the U.S. House of Representatives.[150] The proposal would have required the Department of

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[144] *See, e.g.*, SECTION OF ENVTL. ANALYSIS, STB, FINAL ENVTL. IMPACT STATEMENT: POWDER RIVER BASIN EXPANSION PROJECT App. C, at 36 (Nov. 2001), *available at* pbadupws.nrc.gov/docs/ML1224/ML12243A381.pdf [hereinafter PRB EXPANSION PROJECT FEIS] (concluding in the Final Environmental Impact Statement for the Powder River Basin Expansion Project, that most fugitive coal dust particles are larger than 10 micrometers and are expected to fall out in the air only for relatively short distances).

[145] THE CANADIAN COUNCIL OF MINISTERS OF THE ENV'T, FUGITIVE COAL DUST EMISSIONS IN CANADA at 47 (Nov. 2001), *available at* www.powerpastcoal.org/wp-content/uploads/2011/08/Fugitive-Coal-Dust-Emissions-in-Canada-2001.pdf.

[146] U.S. ENVTL. PROT. AGENCY, FUGITIVE DUST BACKGROUND DOCUMENT AND TECHNICAL INFORMATION DOCUMENT FOR BEST AVAILABLE CONTROL MEASURES 1-6 (1992), *available at* nepis.epa.gov/EPA/html/DLwait.htm?url=/Exe/ZyPDF.cgi?Dockey=2000JCJE.PDF.

[147] *Id.* at 1-7.

[148] MULTNOMAH CNTY. HEALTH DEP'T, THE HEALTH EFFECTS OF RAIL TRANSPORT OF COAL THROUGH MULTNOMAH COUNTY, OREGON 9 (2013), *available at* media.oregonlive.com/environment_impact/other/Coal%20Report%20.pdf.

[149] *See* Northwest Wash. Cent. Labor Council, An Open Letter to the Whatcom County Community (Oct. 11, 2011), *available at* library.constantcontact.com/download/get/file/1105671172285-18/NWWCLC+Doc+Letter0001.pdf; *see also* PRB EXPANSION PROJECT FEIS, *supra* note 144, App. C, at 35 (determining that "coal dust is relatively inert and not a hazard to human health or biological resources . . . ."). *Id.* at App. C, at 36 (concluding that most fugitive coal dust particles are larger than 10 micrometers).

[150] Ricky Maranon, *Congress Shoots Down Proposed CB Coal Train Study*, KCBY News, Sept. 26, 2012, www.kcby.com/home/related/Congress-shoots-down-proposed-CB-coal-train-study-171435621.html.

Transportation and the EPA to issue a report to Congress about the environmental and public health impacts of fugitive coal dust within six months of the bill's passage.[151] Two reasons for rejecting the proposal were that the EPA has already extensively studied the impacts of PM, and that coal dust can be regulated as PM by the agency.[152] Despite scientific uncertainty and conflicting views on the impacts of coal dust, that inconclusiveness is not fatal to a State's ability to regulate coal dust as PM.

Under the CAA, uncertainty is not a prohibitive factor in regulating air pollution. The EPA is not restricted to mere remedial regulation, because it is authorized to regulate pollution that it determines "may reasonably be anticipated to endanger public health or welfare."[153] Indeed, "[t]his language requires a precautionary, forward-looking scientific judgment about the risks of a particular air pollutant, consistent with the CAA's precautionary and preventive orientation."[154] Although a State can regulate coal dust as PM, the regulation will have to avoid ICCTA preemption.

Regulating coal dust as PM has the advantage of avoiding ICCTA preemption for several reasons. First, the regulation would have the advantage of a favorable standard of review. ICCTA preemption is a question of law that courts review de novo, and the presumption is against preemption, placing the burden of persuasion on the party arguing preemption. [155] Additionally, preemption is unlikely because the regulation would carry the force and effect of a federal law, serve the interest of public health and welfare, be generally applicable to all sources of coal dust, and not unreasonably burden railroad operations or interstate commerce.

The CAA's SIP program is an example of a cooperative federalism arrangement,[156] requiring state and federal governments to work together to achieve NAAQS. [157] Courts will seek to harmonize the CAA and

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[151] H. Amdt. 1493, 112th Cong (2012). The proposal was raised by Congressman Peter Defazio (D-Or.) as an amendment to the "Stop the War on Coal Act." H.R. 3409, 112th Cong. (2012).

[152] Maranon, *supra* note 150.

[153] Coal. for Responsible Regulation, Inc. v. Envtl. Prot. Agency, 684 F.3d 102, 122 (D.C. Cir. 2012) (per curiam) (citing 42 U.S.C. § 7521(a)(1)).

[154] *Id*. (internal quotation marks omitted).

[155] *See, e.g.*, Tex. Cent. Bus. Lines Corp. v. City of Midlothian, 669 F.3d 525, 529 (5th Cir. 2012).

[156] COLUMBIA CTR. FOR CLIMATE CHANGE LAW, *supra* note 20, at 10-11.

[157] "Cooperative federalism" is the "[d]istribution of power between the federal government and the states in which each recognizes the powers of the other while jointly engaging in certain governmental functions." BLACK'S LAW DICTIONARY (9th ed. 2099); *see, e.g.*, Hodel v. Va. Surface Mining & Reclamation Ass'n, 452 U.S. 264, 289 (1981) (holding that the Surface Mining Act, like

ICCTA,[158] because once approved by the EPA, state regulations promulgated in a SIP become federal law.[159] Accordingly, the STB has stated that the ICCTA does not generally preempt EPA-approved statewide plans under federal environmental laws.[160] Coal dust regulations in a SIP are not as likely to be preempted by the ICCTA as regulations that are not a part of the SIP.

Multiple federal courts have held that the ICCTA "preempts all 'state laws that may reasonably be said to have the effect of managing or governing rail transportation, while permitting the continued application of laws having a more remote or incidental effect on rail transportation.' What matters is the degree to which the challenged regulation burdens rail transportation." [161] Unlike a narrow rule that "appl[ies] exclusively and directly to railroad activity,"[162] a broad regulation on fugitive coal dust emissions from all mobile sources would have the essential "incidental effect" on railroads to avoid preemption.

Moreover, the EPA has already approved the regulation of PM from mobile sources. For example, the Idaho SIP for particulate matter requires, when practical, that open-bed trucks transporting dust-emitting materials be covered.[163] Applying a similar rule to *all* mobile sources transporting dust emitting materials (e.g., coal) would generally and non-discriminatorily encompass rail transportation of coal.

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the CAA, survives Tenth Amendment challenges because it "establishes a program of cooperative federalism that allows the States, within limits established by federal minimum standards, to enact and administer their own regulatory programs, structured to meet their own particular needs").

[158] *See, e.g.*, Ass'n of Am. R.Rs. v. S. Coast Air Quality Mgmt. Dist., 622 F.3d 1094, 1097 (9th Cir. 2010) ("If an apparent conflict exists between ICCTA and a *federal* law, then the courts must strive to harmonize the two laws, giving effect to both laws if possible. If an apparent conflict exists between ICCTA and a *state or local* law, however, different rules apply." (citations omitted)).

[159] Safe Air for Everyone v. U.S. Envtl. Prot. Agency, 488 F.3d 1088, 1091 (9th Cir. 2007); *see also Ass'n of Am. R.Rs.*, 622 F.3d at 1094 (holding that a local California Air District could not enforce a rule against idling trains unless it first submitted the rule for approval as part of the California SIP and then the SIP was submitted to the EPA for approval). *Id.* at 1098 (until the rule is approved by both the State and the EPA, it does not "have the force and effect of federal law").

[160] *Ass'n of Am. R.Rs.*, 622 F.3d at 1098; *see also* Holland v. Delray Connecting R.R., 311 F. Supp. 2d 744, 757 (N.D. Ind. 2004) (stating that there is a "clear indication that the STB itself sees some difference in the preemptive scope of 49 U.S.C. § 10501(b) between state law of general applicability and federal law of general applicability.").

[161] *Ass'n of Am. R.Rs.*, 622 F.3d at 1097-98 (quoting N.Y. Susquehanna & W. Ry. Corp. v. Jackson, 500 F.3d 238, 252 (3d Cir. 2007)); *see also* Franks Inv. Co. v. Union Pac. R.R., 593 F.3d 404, 410 (5th Cir. 2010) (en banc) (agreeing with that "persuasive" interpretation of the scope of ICCTA preemption).

[162] *Ass'n of Am. R.Rs.*, 622 F.3d at 1098 (holding that the Air Quality District's rules regulating idling locomotive emissions—which were not part of the SIP—were preempted by the ICCTA because "the rules apply exclusively and directly to railroad activity, requiring the railroads to reduce emissions and to provide, under threat of penalties, specific reports on their emissions and inventory.").

[163] IDAHO ADMIN. CODE r. 58.01.01.651 (Westlaw 2013).

A regulation on coal dust will be preempted if it significantly interferes with railroad operation or unreasonably burdens interstate commerce.[164] The STB has clarified that the ICCTA does not interfere with state and local agencies' ability to implement federal environmental statutes, such as the CAA, unless the "regulation is being applied in such a manner as to unduly restrict the railroad from conducting its operations or unreasonably burden interstate commerce."[165] Regulating coal dust would not "unduly restrict" railroad operations, because the STB has already ruled that requiring coal dust suppression methods is not unreasonable.[166] The STB recognizes that loading requirements for various commodities are regularly established and that the rules can "change . . . in response to changing circumstances, such as here, where the problem of coal dust became apparent after years of increasingly heavy traffic."[167] The STB's own precedent, allowing coal dust mitigation measures, indicates that regulating coal dust emissions is not an unreasonable burden on railroad operations.

Although coal dust mitigation measures (e.g., surfactants or covered cars) would increase cost, it would not invalidate the regulation for unreasonable interference with railroad operations. In *New Orleans & Gulf Coast Railway Co. v. Barrois*, the U.S. Court of Appeals for the Fifth Circuit stated that it is "doubt[ful] whether increased operating costs are alone sufficient to establish unreasonable interference with railroad operations."[168] Indeed, reasoning that generally applicable laws are preempted by the ICCTA simply because they have an economic

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[164] Interstate commerce is burdened when either the dormant Commerce Clause or the Commerce Clause is violated. The "dormant" Commerce Clause is implied in the Commerce Clause, U.S. CONST., art. I, § 8, cl. 3, and prohibits states from passing laws that discriminate against or burden interstate commerce. Violations of the dormant Commerce Clause occur when a law discriminates against interstate commerce by "differential treatment of in-state and out-of-state economic interests that benefits the former and burdens the latter. Discriminatory laws that are motivated by simple economic protectionism are subject to a virtually *per se* rule of invalidity, . . . which can only be overcome by a showing that the State has no other means to advance a legitimate local purpose." United Haulers Ass'n v. Oneida-Herkimer Solid Waste Mgmt. Auth., 550 U.S. 330, 338-39 (2007) (internal quotation marks and citations omitted).

[165] Humbolt Baykeeper v. Union Pac. R.R., No. C 06-02560 JSW, 2010 WL 2179900, at *3 (N.D. Cal. May 27, 2010) (citing Friends of the Aquifer, STB Financial Docket No. 33966 (Surface Transp. Bd. Aug. 10, 2001), 2001 WL 928949, at *4.

[166] Ark. Elec. Coop. Corp., No. FD 35305 (Surface Transp. Bd. Mar. 2, 2011), www.stb.dot.gov/decisions/readingroom.nsf/WebDecisionID/40436?OpenDocument, 2011 WL 742698, at *7.

[167] *Id.* at *8.

[168] New Orleans & Gulf Coast Ry. Co. v. Barrois, 533 F.3d 321, 335-36 (5th Cir. 2008) (internal quotation marks omitted) (citing Lehigh Valley R.R. v. Bd. of Pub. Util. Comm'rs, 278 U.S. 24, 33-34 (1928), which had held that a requirement that a railroad to bear an additional $100,000 expense to construct an overheard crossing to preserve the straightness of a road for safety reasons was near, but not beyond, the line of reasonableness).

impact "could mean that railroads cannot be required to put postage on their mail."[169] In fact, although "any tariff provision must be reasonably commensurate economically with the problem it addresses," the STB decided that no quantified cost-benefit analysis was warranted when deciding the reasonableness of BNSF's coal dust suppression requirements.[170]

Furthermore, the CAA already regulates aspects of the railroads at the federal level. The EPA Administrator is required to set standards for locomotive engines to "achieve the greatest degree of emission reduction achievable through the application of technology."[171] The EPA's authority to regulate locomotive engines emissions[172] demonstrates that the ICCTA does not make railroads untouchable by the CAA. Although states are explicitly preempted by the EPA from promulgating any rules regulating locomotives or locomotive engines,[173] no such preemption exists for states regulating coal dust.

Additionally, soon after the enactment of ICCTA, the STB ruled that the preemption clause[174] "does not usurp the right of state and local entities to impose appropriate public health and safety regulation on interstate railroads," so long as those regulations do not interfere with or unreasonably burden railroading.[175] In *Green Mountain Railroad v. Vermont*, the U.S. Court of Appeals for the Second Circuit followed this

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[169] Holland v. Delray Connecting R.R., 311 F. Supp. 2d 744, 757 (N.D. Ind. 2004).

[170] Ark. Elec. Coop. Corp., No. FD 35305 (Surface Transp. Bd. Mar. 2, 2011), www.stb.dot.gov/decisions/readingroom.nsf/WebDecisionID/40436?OpenDocument, 2011 WL 742698, at *4.

[171] 42 U.S.C.A. § 7547(a)(5) (Westlaw 2013).

[172] Although EPA has set federal standards for locomotive engines, a federal district court in New Jersey ruled that state enforcement of "idling" locomotives was preempted by the ICCTA. Middlesex Cnty. Health Dep't v. Consol. Rail Corp., Civil No. 08-4547 (AET), 2009 WL 62444 (D.N.J. Jan. 9, 2009). However, the law alleged to be in violation was a narrative standard that did not directly regulate locomotive emissions, but rather stated, "Notwithstanding compliance with other subchapters of this chapter, no person shall cause, suffer, allow or permit to be emitted into the outdoor atmosphere substances in quantities which shall result in air pollution as defined herein." N.J. ADMIN. CODE § 7:27-5.2(a) (Westlaw 2013). Notably, while the court's main discussion was of preemption by the ICCTA, defendants also raised the defense of the state law being preempted by the CAA and the court acknowledged that "rules and regulations of the EPA explain that state attempts to regulate this sphere of environmental legislation are preempted." *Middlesex*, 2009 WL 62444, at *2 (citing 63 Fed. Reg. 18,978, 18,979 (Apr. 16, 1998)). Therefore, it is difficult to ascertain whether an EPA-approved SIP rule regulating idling locomotives (if it were allowed and not preempted also by the CAA) would also be preempted by the ICCTA. *See, e.g.*, Ass'n of Am. R.Rs. v. S. Coast Air Quality Mgmt Dist., 622 F.3d 1094, 1098 (9th Cir. 2010).

[173] 42 U.S.C.A. § 7543(e)(1)(B) (Westlaw 2013); *see also* Emission Standards for Locomotives and Locomotive Engines, 63 Fed. Reg. 18,978 (Apr. 16, 1998) (codified at 40 C.F.R. pts. 85, 89, 92).

[174] 49 U.S.C.A. § 10501 (Westlaw 2013).

[175] New York Susquehanna & W. Ry. Corp. v. Jackson, 500 F.3d 238, 252-53 (3d Cir. 2007) (citing King County, 1 S.T.B 731 (Surface Transp. Bd. Sept. 25, 1996), 1996 WL 545598, at *3-4.

approach by holding that states exercising traditional police powers through "direct environmental regulations enacted for the protection of the public health and safety, and other generally applicable, non-discriminatory regulations and permit requirements would seem to withstand preemption."[176] As discussed above, regulating coal dust would not unreasonably burden the railroads and can be done in a general manner. An additional reason to find in favor of non-preemption is that PM is regulated due to its correlation to potential health problems,[177] and health and safety are traditional state police powers.[178] It follows that, because coal dust particles can be smaller than ten micrometers and thus qualify as PM, a rule to regulate fugitive coal dust would be an exercise of a State's traditional police powers over public health and safety, which favors non-preemption. Even if states are unable to regulate coal dust, private lawsuits under the CAA may provide a solution.

B. CITIZEN SUITS UNDER NARRATIVE STANDARDS

If a State does not regulate coal dust as particulate matter, private parties can bring a "citizen suit" under a SIP's narrative emissions standard.[179] The CAA authorizes citizens to bring a civil action against any person alleged to be, or actually in violation of, an *emission standard or limitation*.[180] Only Idaho[181] and Washington,[182] two of the states through which coal shipments travel, have narrative standards in their

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[176] Green Mountain R.R. v. Vt., 404 F.3d 638, 643 (2d Cir. 2005).

[177] *Particulate Matter*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/pm/index.html (last updated Mar. 18, 2013).

[178] *See, e.g.*, City of Columbus v. Ours Garage & Wrecker Serv., Inc., 536 U.S. 424, 438 (2002) ("Preemption analysis starts with the assumption that the historic police powers of the States were not to be superseded by the Federal Act unless that was the clear and manifest purpose of Congress." (internal quotation marks and brackets omitted)).

[179] While numeric standards set specific, quantitative limits and must be applied to specific conditions and sets of circumstances, they leave little room for interpretation. Narrative standards are general statements that establish quality goals and provide a mechanism for a qualitative framework for monitoring, protecting, and maintaining air or water quality. Narrative standards are for the most part guidelines, presented as general descriptions, and they encompass significant latitude for interpretation. They are typically established in the absence of scientifically based numeric standards or as a general framework within which numeric standards are defined. Pennaco Energy, Inc. v. U. S. Envtl. Prot. Agency, 692 F. Supp. 2d 1297, at 1302 n.4 (D. Wyo. 2009).

[180] 42 U.S.C.A. § 7604(a)(1) (Westlaw 2013) (emphasis added).

[181] IDAHO ADMIN. CODE r. § 58.01.01.776 (Westlaw 2013) ("No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids into the atmosphere in such quantities as to cause air pollution.").

[182] WASH. ADMIN. CODE § 173-400-040 (Westlaw 2013) ("No person shall cause or allow the emission of any air contaminant from any source if it is detrimental to the health, safety, or welfare of any person, or causes damage to property or business.").

SIPs.

A narrative standard differs from a numeric standard in that no quantified amount of the pollutant is stated in the SIP. For example, air quality criteria can consist of numeric pollution limits (for example, sulfur dioxide is not to exceed 0.030 parts per million/year[183]) or narrative standards (for example, "no person shall allow emissions if detrimental to health, safety, or cause property damage"). The CAA defines "emission standard" and "emission limitation" as a requirement that "limits the *quantity, rate, or concentration* of emissions of air pollutants on a continuous basis."[184] However, as discussed below, the ability to maintain a citizen suit depends on how a court interprets "emission standard" or "emission limitation."

Some courts require the SIP provision to include specific, quantified standards, and some courts may interpret the narrative standard as sufficient. In *City of Ashtabula v. Norfolk Southern Corp*., a railway company was sued based on allegations that coal dust emissions from its coal dock facility were a public nuisance in violation of Ohio's SIP.[185] The SIP provision prohibits the emission from any source of dust or any other substances as to endanger the health, safety or welfare of the public, or cause unreasonable injury or damage to property.[186] The U.S. District Court for the Northern District of Ohio held that this narrative standard established an identifiable emission limitation as required to bring a citizen suit, because the emission was "*in such amounts*" as to damage plaintiff's property and constitute a public nuisance.[187] Furthermore, the U.S. Supreme Court has reasoned that enforcing only numerical criteria would impose a heavy regulatory burden on the states, because they would be required to conduct detailed and individualized studies.[188]

On the other hand, in *McEvoy v. IEI Barge Services, Inc.*, the U.S. Court of Appeals for the Seventh Circuit held that the plaintiff could not sue a barge service under the citizens' suit provision of the CAA because the complaint cited two laws that did not include numeric emission limits.[189] The court noted that not all emissions are pollution, but rather, that pollution is a subset of emissions covered by the CAA that must be defined with some specificity in order to communicate what is

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[183] 40 C.F.R. § 50.4 (Westlaw 2013).

[184] 42 U.S.C.A. § 7602(k) (Westlaw 2013) (emphasis added).

[185] City of Ashtabula v. Norfolk S. Corp., 633 F. Supp. 2d 519, 527 (N.D. Ohio 2009).

[186] *Id*. at 528.

[187] *Id*. (citing 42 U.S.C. § 7602(k)).

[188] Nw. Envtl. Advocates v. City of Portland, 56 F.3d 979, 989-90 (9th Cir. 1995) (citing PUD No. 1 v. Wash. Dep't of Ecology, 511 U.S. 700, 717 (1994)).

[189] McEvoy v. IEI Barge Servs., Inc., 622 F.3d 671, 673, 680 (7th Cir. 2010).

forbidden.[190] Therefore, the state law provision[191] prohibiting "emission of any contaminant . . . so as . . . to cause or tend to cause air pollution in Illinois, . . . or so as to prevent the attainment or maintenance of any applicable ambient air quality standard"[192] did not define any "quantity, rate, or concentration of emissions"[193] as required by the CAA.

Washington citizens affected by coal dust will probably not have redress under the State's narrative standard. In *Washington Environmental Council v. Sturdevant*, a federal district court in Washington agreed with the *McEvoy* court[194] in holding that a similarly worded narrative standard was not enforceable through a citizen suit, because "courts only enforce specific SIP strategies; they do not enforce overall objectives or aspirational goals."[195]

It is unlikely that a citizen suit under the CAA will play a significant role for states affected by PRB coal exports, because only Idaho and Washington have such standards, and Washington courts have ruled that a narrative emission standard is insufficient to support a citizen suit. Although a citizen suit may be available in other states affected by PRB coal exports, those states are beyond the scope of this Comment.

V. CONCLUSION

The effects of burning coal are felt around the globe.[196] In the United States, the combined factors of stricter regulations and cheaper fuel alternatives have curbed the domestic appetite for coal-fired energy.[197] However, foreign energy demands have created an overseas

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[190] *Id*. at 678.

[191] The court also held invalid plaintiff's alleged violation of an "emission of fugitive particulate matter from any process . . . that is visible by an observer looking generally toward the zenith at a point beyond the property line of the source." *Id.* at 673 (citing ILL. ADMIN. CODE tit. 35, § 212.301 (Westlaw 2013)).

[192] *Id.* (citing ILL. ADMIN. CODE tit. 35, § 201.141 (Westlaw 2013)).

[193] 42 U.S.C.A. § 7602(k) (Westlaw 2013).

[194] The court also distinguished the *McEvoy* case because in *McEvoy*, the owner of a facility was sued, not the State. It is well established that, because state "agencies have broad discretion under the Narrative Standard, the provision is unenforceable as a citizen suit." Wash. Envtl. Council v. Sturdevant, 834 F. Supp. 2d 1209, 1214 (W.D. Wash. 2011); *see, e.g.*, Sierra Club v. Korleski, 681 F.3d 342 (6th Cir. 2012); Citizens for a Better Env't v. Deukmejian, 731 F. Supp. 1448, 1454 (N.D. Cal. 1990).

[195] *Sturdevant*, 834 F. Supp. 2d at 1214.

[196] *See, e.g.*, Bradsher & Barboza, *supra* note 36, at A1.

[197] *See Overview: The CAA Amendments of 1990*, *supra* note 11. The Amendments, e.g., "promote[] the use of clean low sulfur coal and natural gas, as well as innovative technologies to clean high sulfur coal through the acid rain program." *Id.*; *see also* Peskoe, *supra* note 57, at 262 (stating that in 2010, natural gas accounted for twenty-four percent of electricity generation in the United States, up from only thirteen percent in 1996).

market.[198] In light of these circumstances, the fight against coal has expanded to curtailing coal exports. One way to protect the environment and human health is to regulate fugitive coal dust.

Fugitive coal dust can be regulated by either a safety rule under the authority of the FRA or by individual states pursuant to the authority granted by the CAA's SIP mechanism. Both of these approaches can avoid ICCTA preemption. However, addressing the issue as a safety regulation has the added advantage of conclusive studies and widespread acceptance that coal dust presents a safety issue because it contributes to derailments. Conversely, data gaps exist regarding the impact on human health and the environmental caused by coal dust when viewed as PM under the CAA.

Although a safety regulation is supported by more uncontested data than regulation of coal dust as PM, it is important to remember that the CAA is a precautionary statute. This means that absolute certainty of a substance's harmful effects is not a prerequisite to regulation. Therefore, both regulatory approaches remain viable options for addressing fugitive coal dust problems. The most significant difference will be jurisdictional. Individual states can act alone and regulate coal dust as they deem necessary to protect the health of their citizens and their environment, or the FRA can set a federal standard that will apply uniformly throughout the states.

[198] *See* COLUMBIA CTR. FOR CLIMATE CHANGE LAW, *supra* note 20, at 3.